Primary study evidence on effectiveness of interventions (home, early education, child care) in promoting social and emotional wellbeing of vulnerable children under 5.

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This paper summarises the key evidence from primary evaluation studies (e.g. US, UK, Netherlands and elsewhere) on progressive interventions for promoting the social and emotional well-being of vulnerable children under the age of 5. A progressive intervention is defined as one where the provision is proportionate to the level of disadvantage.

This paper was prepared as part of the NICE programme of review work on early interventions to promote the social and emotional wellbeing of vulnerable children under 5 years. It is designed to extend the evidence presented in the main review (Blank et al., 2011).

1. What are the most effective and (where there is evidence) cost-effective progressive home-based interventions for helping improve and maintain the social and emotional wellbeing of vulnerable children (0-5 years) and their families?

Included studies on Home Visiting have been categorised as follows.

Home Visiting programmes delivered by nurses or other health professionals:

- Family Nurse Partnership (long term)
- Health visitors
- Home visiting for parents of very preterm infants (long term)

Home visiting delivered Video Interaction Guidance for mothers at very high risk:

- Home Visiting with VIG (short term)

Home visiting schemes delivered primarily by paraprofessional lay workers

- Home Start, Starting Well (Scotland), Peer Mentoring

A summary statement of the evidence is provided for each of these interventions.

i) HOME VISITING BY HEALTH PROFESSIONALS

Family Nurse Partnership (FNP)

The Family Nurse Partnership (FNP) is the UK name for the US developed Nurse-Family Partnership (NFP), perhaps the leading and best-evaluated model of home visiting by health professionals (Olds 2006, Olds et al. 2007b; Eckenrode et al. 2010). The NFP is a preventive programme for young first time mothers from disadvantaged backgrounds and their partners. It offers intensive and structured home visiting, delivered by specially trained nurses (Family Nurses) from early

pregnancy until the child is two. NFP has three aims, to improve: pregnancy outcomes, child health and development and parents' economic self-sufficiency. The methods are based on theories of human ecology, self-efficacy and attachment, with much of the work focused on building a strong relationship between the client and family nurse to facilitate behaviour change and tackle issues that prevent some mothers and fathers caring well for their child.

The NFP has strong theoretical foundations and a clear operational strategy, and is designed to be delivered from the antenatal period to 2 years postnatal. Longitudinal research in the US based on three RCTs has shown moderate but enduring effects. The most pervasive of these are on maternal life course (such as fewer and more widely spaced pregnancies) and better financial status. The likelihood of child abuse and accidents is also reduced. Children show evidence of improved cognitive outcomes from as young as 4 with evidence for an impact on socio-emotional development at later ages, such as a 67% reduction in behavioural and emotional problems at child age six (Olds et al., 2004) and a 28% reduction in 12-year olds' depression and anxiety (Kitzman et al., 2010). Reductions in adolescent antisocial behaviour were also found at age 15 in the children from the first US trial (Elmira, NY), including a 59% reduction in arrests by age 15, a 90% reduction in adjudication as PINS (person in need of supervision) for incorrigible behaviour (Olds et al., 1998), and 33% fewer arrests among female children at age 19 (Eckenrode et al., 2010). None of the US trials reported on child emotional or behavioural outcomes in any detail until children were aged six, and it is possible that future research may identify effects during the preschool years. Thus although the programme is delivered to families with children under the age of 5, the outcomes for children in this age group, in terms of wellbeing, are for the most part indirect (e.g. less child abuse) or with potential for improved wellbeing at a later age.

NFP has been tested in England since April 2007, where it is known as Family Nurse Partnership (FNP). It has been evaluated through a formative evaluation of the first ten sites, with an ongoing RCT in 18 sites which will report in 2013, comparing the FNP programme with routine services up to the time when the programme ends (at 24 months). The outcomes that are being measured include smoking during pregnancy, breastfeeding, admissions to hospital for injuries and ingestions, further pregnancies, and child development at age two.

Barnes et al. (2008, 2009a, 2011a) found evidence that the FNP is acceptable to vulnerable, young first-time mothers and their partners. Enrolment rates were high, on average 87% of those offered the programme; and higher for under 20s (88%) compared with 20 to 23 year olds (81%). Attrition rates were variable, with high mobility in some areas, as clients moved or were not locatable. Preliminary results based on data collected by the nurses are promising for health behaviours (e.g. smoking cessation during pregnancy, initiating breastfeeding) as well as for increase in parents' expressed confidence and in their aspirations for the future. There was good engagement of fathers, with more than half attending some visits, and the remaining showing signs of engagement (e.g. by requesting materials) when they could not actually attend. This is an important finding given the significance of male partners' support to mothers (Lamb, 2010). Trends in health behaviours are consistent with review-level evidence for NFP.

In the US it was found that mothers with several vulnerabilities, such as low IQ, mental health problems and low self efficacy, showed the most benefit (Olds, 2006).

Attrition in the UK pilot sites was not related to intake vulnerabilities (Barnes et al., 2011a) but the differential participation and effectiveness of FNP on particularly vulnerable client groups (i.e. parents with drug or alcohol addiction, severe mental illness) needs to be evaluated in the UK. Review level evidence suggests more limited effect of home visiting for parents with problems such as a drug addiction (Doggett, 2005).

Health visitors, Family Partnership Model

Barlow et al. (2007) evaluated the effectiveness and cost-effectiveness, and stakeholder perspectives of home visiting delivered by health visitors using the Family Partnership Model. The study involved a sample of 131 women recruited through GP practices, who had been identified as vulnerable and specifically at risk of abuse and neglect (e.g. with mental health or housing problems). Visits took place from 6 months antenatally to 12 months postnatally and were designed to promote parent-child interaction. At 12 months small differences favouring the home visited group were observed on an independent assessment of maternal sensitivity and infant cooperativeness, which were lost at 3-years (Barlow et al., 2008). No differences were identified on measures of maternal psychological health attitudes and behaviour, infant functioning and development at either 12months or 3 years. There was a non-significant increase in the likelihood of intervention group infants being the subject of child protection proceedings, or being removed from the home, while one death occurred in the control group. The increase in child protection proceedings is often treated as an example of surveillance bias. Barlow et al. (2007) suggest, however, that this outcome represents a valuable secondary prevention of the deleterious consequences of abuse. Improvements in health visitors' sensitivity to abusive parenting may have enabled them to institute child protection proceedings at an earlier stage in the child's life, reducing the length of exposure to damaging environments by placing infants with substitute parents during the first year of life (Ward et al.,forthcoming).

Evidence from a qualitative study with participating parents (Kirkpatrick et al., 2007) found that, despite initial concerns and negative preconceptions about health and social service professionals, participating women greatly valued the relationships that were established with their home visitors and identified a number of ways in which they had benefited. These included increased confidence, improved mental health, better parenting, improved relationships and changes in their attitudes toward professionals.

It was reported that home visitors using the model differed from health visitors in terms of the former being more focused on facilitating change and on the clients needs, being less directive, and more focused on relationship-building and on the baby and mother-baby relationship. The experience was felt to be more proactive and home visitors perceived themselves to have played a significant role in helping the vulnerable participating families by providing a stable and trusting relationship; building confidence, improving understanding, addressing a range of problems including marital discord and domestic violence, challenging parental behaviour likely to have a detrimental impact on children, making referrals to other agencies including social services, and improving mother-child relationships (Brocklehust et al., 2004).

Evidence from a cost-effectiveness study (McIntosh et al., 2009) showed that the mean 'societal costs' in the control and intervention arms were £3874 and £7120 respectively, a difference of £3246. The mean 'health service only' costs were £3324 and £5685 respectively, a difference of £2361. As well as significant improvements in maternal sensitivity and infant cooperativeness there was also a non-significant increase in the likelihood of the intervention group infants being removed from the home due to abuse and neglect. These incremental benefits were delivered at an incremental societal cost of £3246 per woman. The results of the study provide evidence to suggest that, within the context of regular home visits, specially trained professional home visitors can increase maternal sensitivity and infant cooperativeness and are better able to identify infants in need of removal from the home for child protection, and that the societal cost of this is £3246 per woman.

The Family Partnership Model was also evaluation as part of the European Early Promotion Project (EEPP), a mental health promotion intervention comprising a universal and an indicated component, both of which consist of home visits. The universal component consists of trained primary health care workers conducting 'promotional' interviews immediately before and after all births.

The aim of the interview is to promote positive interaction between parent and child as a key element of healthy psychosocial development during infancy and childhood, and to facilitate the transition to parenthood of first-time parents. For example, the heath visitor might ask, as part of a promotional interview, how the mother felt when she learned that she was pregnant. Positive feelings would then be endorsed and negative feelings explored further and discussed (Puura et al., 2002). These visits are also used to identify families where children are at risk of developing mental health problems. The targeted component of the EEPP consists of a health visitor working intensively using the Parent Partnership Model with families who have been identified, using the screening, as being at increased risk of mental health problems.

The EEPP was evaluated as part of a large multicentre trial in Europe and the UK in which a total of 824 families were recruited from five countries. This was not an RCT and although at baseline there were a small differences between country samples in the extent and type of need (Finnish families having the lowest risk factor rates and Serbia the highest, for example), recruitment was generally successful in including families with a wide range of needs, excluding those with the most severe physical and psychiatric problems. Data were collected when children were between six and eight weeks old and at 24 months.. The results showed significant positive effects, on mother-child interaction, particularly in the Greek sample, where intervention mothers provided more variety for the child, used less punishment, had a better relationship with the child and were more involved and more facilitative than comparison mothers. In the UK, intervention mothers were more responsive towards their children, provided more appropriate play material, had a better relationship with the children, were more involved and used less control than comparison mothers (Puura et al., 2005). A small number of positive findings were identified at 24 months, and it is concluded that the service merits further exploration to identify the value of such promotional and preventative processes (Davis, et al., 2005).

Home visiting for families of preterm infants: Avon Premature Infant Project

A series of longitudinal studies, in the US (McCarton et al., 1997; McCormick et al., 2006) of the Infant Health and Development Program (IHDP), have shown the possibility of improving outcomes for low birth weight (2000 to 2500 grams) preterm babies but not those of very low birth weight (under 2000 grams) through a combination of home visits in the first year, followed by high quality centre-based child care and parent groups. There is long-term change evident up to age 18, when the intervention group had fewer conduct problems, less smoking, alcohol, risky sexual behaviour, and suicidal ideation (McCormick et al., 2006). However, this multi-modal and intensive intervention has not proved to be cost-effective, due to the range of services provided and additional support such as taxis to take the children to the centres. In other words, the estimated financial gains or benefits to society associated with reduced likelihood of the need for expensive services (such as special education services or the involvement of psychologists for behavioural intervention) or gains to society (resulting from increased chances of employment and therefore of tax revenue) were equivalent to or less than the original cost of providing the service (Karoly, 2011).

In the UK Johnson (2005) reported on the findings of a longitudinal RCT evaluating the effectiveness of the Avon Premature Infant Project (APIP), a home-based intervention for parents of very preterm infants (babies born <33 weeks gestational age). Parents received either an intervention aimed at increasing their understanding about the development of their child (the Portage programme, a home-visiting educational service for pre-school children with additional support needs and their families, which emphasises the involvement of parents; Sampon & Wollenburg, 1998), or a social support intervention (from non-professionals), or standard care. Both interventions commenced following discharge from the intensive care units. Visiting was weekly for the first few months, reduced to 2–4 times monthly for the next year, and then to monthly by the time disengagement occurred at 2 years, or earlier if requested by the parent. To a limited extent the frequency of visiting was tailored to suit the family. A full-term reference population was also recruited. Results at age 2 (APIP, 1998) indicated that both interventions provided a boost to general development compared to controls. At 5 outcomes were not significantly different between groups in general cognitive ability scores, motor development or behaviour. Further analyses (in which outcome data were adjusted for social factors) did not reveal any differences among the three groups or by subgroups classified according to a range of perinatal variables.

Video Interaction Guidance (VIG) delivered through Home Visiting

Three studies conducted in the Netherlands (Velderman et al. 2006, van Doesum et al. 2008, Kersten-Alvarez et al. 2010) evaluated the effect of VIG delivered through home visiting. This intervention is of much shorter duration than the FNP (up to 8 sessions), although it has a similar basis in attachment theory, and is highly focused on mothers with clinical level depression.

Two trials compared an experimental group receiving a home visiting intervention (8 – 10 visits) with a control group receiving parenting support by telephone. Outcomes comprised the quality of mother–child interaction, infant attachment security, and infant socio-emotional functioning for a group of mothers with infants aged 1 – 12 months. All mothers had clinically diagnosed depression, sometimes with co-morbidities with the exception of psychotic disorder, manic depression, and/or substance dependence. One in seven mothers was an immigrant or descendant of an immigrant. Around 60% of the infants were firstborns, with a mean age of 5.5 months, and 40% had one or two siblings, with a mean age of 3.9 years.

In the first evaluation (van Doesum, 2008) the VIG intervention had a positive effect on the quality of mother–infant interaction, enhancing sensitivity compared to the control group. Infants in the experimental group had higher scores on a Q-sort measure of attachment security that could range from -1 (very insecure) to +1 (securely attached) and greater social competence although the change in depression was similar across time for both groups.

In the second relatively small RCT (Kersten-Alvarez et al., 2010), 29 mothers with depression were provided with the intervention from 6 to 12 months postnatally and compared to 29 controls. Follow-up when children were age 5 found no lasting impact of the VIG intervention except for families with many adverse life events in the intervening period. Children in these circumstances whose mothers had received VIG had fewer conduct problems, and the findings suggest that the early intervention served as a buffer for the development of externalising behaviour in the children. Because of the frequently reported association between depression and the occurrence of stressful life events, this finding shows promise for the prevention of behaviour problems in children of depressed mothers.

Velderman and colleagues (2006) evaluated the effect of two interventions in breaking the cycle of insecure attachment. They randomly assigned 81 first-time mothers who had been identified using the Adult Attachment Interview as insecure to one of two intervention groups or a control group. The interventions were brief, involving four home visits from a trained home-visitor educated to degree level, when the infants were between 7 and 10 months old. The first intervention, VIPP, consisted of video-feedback and brochures to enhance sensitive parenting. The second intervention, VIPP-R, involved the video-feedback and additional discussions of mothers' childhood attachment experiences in relation to their current caregiving. The findings show that post-intervention mothers in both VIPP and VIPP-R were more sensitive than control mothers although there was no impact of the intervention on infant attachment.

More recently, Moss et al. (2011) evaluated the effectiveness of an 8 weekly home delivered programme for 67 parents of maltreated children aged 1-5 years. The intervention comprised brief discussion of attachment-emotion relation-related themes and video feedback of parent-child interaction, aimed at improving caregiver sensitivity. The results showed significant improvements in the intervention group in parental sensitivity and child attachment security, and a reduction in child disorganization, alongside reduced internalising and externalising problems in older children (ibid).

These results are consistent with meta-analytic findings (Bakermans-Kranenburg et al., 2003) and extend previously demonstrated effectiveness of video feedback intervention (Juffer et al., 1997; Juffer et al., 2005) with a group of insecure first-time mothers, and consistent with a meta-analytic evidence about the benefits for older children (Fukkink, 2008). Mothers of highly reactive infants (those who smile and laugh more, are more active and who also respond more vigorously and negatively to restrictions and changes in the environment) appear to profit most from the intervention, in that their infants' attachment score was more strongly associated with change in maternal sensitivity following the intervention, suggesting the importance of targeting this group using short-term interventions of this nature.

Summary: home-visiting by professionals:

Findings to date show positive trends in level of acceptance of the manualised nurse-home visiting FNP by young first-time mothers with engagement of fathers and indicative evidence that there could be improvement in some health behaviours and in parental confidence. There is as yet no evidence in the UK of the effects of this programme compared to a control group on parental psychological health, infant functioning or development, but strong evidence from the USA of an impact on socio-emotional development from child age 6 onwards.

Evidence about the benefits of less structured intervention from health visitors is equivocal, with possible benefits for maternal sensitivity in the short-term only and no evidence of an impact on mental health or maternal behaviours, for mothers considered at risk for child abuse, in either the short or the long-term. This is consistent with NICE evidence that Health Visitor involvement for mothers with identifiable mental health issues needs to be accompanied by additional support such as cognitive or psychodynamic psychotherapy.

Structured home visits from nurses were effective in improving the cognitive development of preterm infants at 2 years. However, there is no evidence that the Portage home visiting programmes for families of children with special needs (or peer support offered to the comparison group) improved long-term cognitive or motor development or reduced later behavioural problems of children born preterm. However, given the initial positive effect it is possible that if the intervention had been continued there might have been the potential for longer term benefits.

Relatively short programmes of professional home-visiting that incorporate Video Interaction Guidance (VIG) have been designed to enhance infant attachment security by improving the quality of mother-infant interactions. This approach has been tested in the Netherlands, with mothers with clinically diagnosed levels of depression and other co-morbid symptoms, and with children with difficult temperament and in Canada with maltreating parents. There is good evidence of short-term improvements in maternal sensitivity, attachment security and internalising/externalising problems in older children, and in the longer term, of reduction in child externalizing behaviours. It appears to be particularly useful for mothers of highly reactive infants (those

who are highly sensitive to stress) and could potentially be an important method of supporting vulnerable mothers who are not eligible for FNP (i.e. those who are not young, first time mothers).

ii) Home visiting delivered by paraprofessionals or volunteers

Three interventions delivered predominantly or entirely by lay (non-professional) health visitors have been evaluated - two in the UK (Starting Well; Home Start) and one in Ireland (peer mentoring programmes).

Starting Well (Scotland)

Starting Well is a Home Visiting programme that was commissioned by the Scottish Executive Health Department in late 2000 as part of its National Demonstration Projects programme. It was piloted in two highly disadvantaged areas and aimed to engage all families with new-born infants via a team of trained health professionals and paraprofessionals who delivered an intensive home-based service that augmented routine provision.

It was developed after careful study of the US evidence base (particularly for NFP). The key elements of the US programmes on which Starting Well focused were: intensive visiting of families within the home; the development of supportive relationships between families and their visitors; and an emphasis on health promotion approaches. However, the complex nature of home and health visiting makes this a challenging intervention to implement and there were a number of ways in which Starting Well departed from the NFP. These included: targeting of deprived *communities* rather than vulnerable *individuals;* inclusion of *all new* babies as opposed to only *first* babies; the use of paraprofessionals in addition to nurse home visitors; and a reduced focus on the antenatal period, due to the availability of Community Midwifery services in Scotland, and to caseload issues within the project. Starting Well was required to integrate aspects of the programme alongside existing professional and organisational structures. The focus on deprived communities is akin to the approach taken by the Sure Start local programmes (see section iii). Key service innovations included topic-specific initiatives (home safety, encouraging and modelling play), enhanced support for minority ethnic families, and the delivery of a validated parenting skills programme (Triple P Positive Parenting, a set of structured, behaviourally-oriented programmes adapted for use of families at varying levels of need, including those in higher risk groups). In addition to the Home Visiting programme, the project engaged each community by attempting to build links between existing pre-school agencies and by developing new resources. The overall aim was to improve child health statistics that were among the worst in Western Europe.

A multimodal, independent evaluation was undertaken (Mackenzie et al. 2004; see also Shute & Judge 2005). Key health-related outcomes included: quality of the home environment; maternal depressive symptoms; child dental registration; and measures of maternal service satisfaction. The findings revealed lower rates of depressive symptoms amongst intervention mothers at 6 but not 18-months; no improvement in the quality of the home environment at 6-months but a small positive

effect at 18-months; higher levels of client-satisfaction with levels of health visitor support; and higher levels of dental registration at both assessments. Despite doubts as to the transferability of the North American evidence-base to the British context and a number of evaluation limitations, findings relating to maternal depressive symptoms and HOME score are supportive of short-term benefits to the psychological health of study mothers, and potentially long-term cognitive and emotional developmental benefits for study children. Post-intervention, minority ethnic mothers showed poorer HOME scores and higher levels of depressive symptoms. These findings are interpreted as indicating unmet need amongst this group but should be treated with some caution due to the fact that key instruments have not yet been validated in a British Asian cohort.

Home-Start

McAuley and colleagues (2004) evaluated Home-Start, a volunteer support programme for anxious and stressed mothers consisting of a 2 hour, weekly visit to the mothers' homes. Volunteers are generally local parents who receive structured preparation and monthly supervision.

The study evaluated the effectiveness of Home-Start support on five domains of well-being: maternal mental/physical health, social isolation, multiple births/young children and children with special needs, as well as perceived effects on children and families. Most were aged around 30, a third was lone parents; more than half of the mothers had one child with special needs; and a quarter had 2 or more children with special needs. Almost half of the mothers appeared to be suffering from a postnatal depressive illness, while two thirds appeared to have more general depressive symptomatology, suggesting widespread problems, often of a severe nature.

Interview data showed that mothers who received the support of a Home-Start volunteer when they were experiencing such stress valued the service and considered that it had made a positive difference to their lives. However, no statistically significant difference was found on measures of maternal stress, mental health, maternal self-esteem or child development. Improvements were identified in both intervention and control groups.

The impact of Home-Start was also evaluated by Barnes and colleagues (2006b; 2009b) using a cluster randomized trial. Mothers were recruited for the trial in late pregnancy using a screening index of disadvantage, and offered Home-Start support soon after their child was born. They were compared with similarly recruited mothers in areas where the support was not available. In addition, many mothers identified as vulnerable turned down the offer of support (or were never offered it) so formed a second comparison group. This was due in part to capacity problems of the volunteer organisation. The only evidence of effectiveness at follow-up, when the infants were 12 months of age, was a greater reduction in reported parenting stress for the intervention mothers compared to the control group and those who were not supported (Barnes et al., 2006b). In addition, compared to a matched control group and to mothers who were in the intervention arm of the study but were not supported, there was no impact of by Home-Start on maternal mental health. It was concluded that to reach and then make a difference with vulnerable families it may

be better to offer a discrete, time-limited and clear-cut intervention by a professional (Barnes et al., 2009b).

Peer mentoring

Three trials (Johnson et al. 1993; Murphy et al. 2008; Cupples et al., 2011) undertaken in Ireland have evaluated the effect of peer mentoring programmes on reduction of health inequalities.

Community mothers were offered a structured approach, using materials previously intended for use by professionals the Barker Child Development Programme. In a randomised trial in Dublin, Ireland, trained community mothers made monthly visits for the first year of the child's life, visiting families with a newborn infant living in selected areas of disadvantage. The trial identified benefits of the programme for mothers and children (Johnson, Howell & Molloy, 1993). Intervention children received more immunisations, and parents read and played in a more stimulating manner and were less tired and miserable.

In contrast, an RCT involving 343 women (Cupples et al., 2011) was undertaken in parallel with a qualitative study involving programme recipients, lay workers and midwife supervisors (Murphy 2008). The results show that, although participating women valued advice given in context of personal experience of child-rearing, and that mentors gained health-related knowledge, personal skills and new employment opportunities, there were no evidence of benefits on measures of infant development or maternal health when infants were one year.

A qualitative study (Murphy et al. 2008) identified some of the difficulties in implementing this programme and suggests some of the reasons for its limited impact. This study identified the difficulties faced by lay workers in contacting women, and in motivating a group of participants who were not interested in the programme. The study also identified the uneven quality of mentoring by lay workers (some of whom, for example, understood it as the need to create friendships), and found that external influences, including family and friends, could prevent or facilitate mentoring. Time constraints in reconciling flexible mentoring arrangements with demands of other commitments were also identified as posing major personal difficulties for lay-workers.

Summary: There is some evidence that Starting Well has the potential to improve maternal psychosocial health and the quality of the home for supporting optimal child development. Undoubtedly this is due to the fact that health professionals provide some of the home-visits, working alongside paraprofessionals.

There is little evidence of the effectiveness of peer-mentoring on parent or child outcomes unless volunteers follow a structured programme and receive supervision.

iii) Multi-modal interventions including home-visiting

Sure Start

Sure Start aimed to "give children the best possible start in life" through improvement of childcare, early education, health, and family support, with an emphasis on outreach and community development in the 20% most deprived communities in England. The programme (then called Sure Start Local Programmes) was originally intended to support families from pregnancy until children were four years old but its brief has been extended to support families who need it through to children's early teens. The evaluation is concerned only with the original programme, focussed on children aged 4 and under.

In the early years *Sure Start Local Programmes* (SSLPs) had no prescribed curriculum or manualised set of services that would promote fidelity of treatment to a prescribed model. Instead, services were designed to respond to local needs while addressing core domains: outreach and home visiting; family support; and good quality play, learning and childcare facilities.

The National Evaluation team (Belsky et al., 2006) evaluated the effects of Sure Start local programmes (SSLPs) on children and their families with a quasi-experimental cross-sectional study in SSLP areas and comparable, deprived communities waiting to receive Sure Start. This large-scale study involved mothers of 12,575 children aged 9 months and 3,927 children aged 36 months in SSLP areas and mothers of 1,509 children aged 9 months and 1,101 children aged 36 months in comparison communities. Outcome measures comprised: maternal reports of community services, family functioning and parenting skills, child health and development, and verbal ability at 36 months.

Although there were some main effects for Sure Start on family and child outcomes, some results varied by subgroup. Specifically, three-year-olds of non-teen mothers (86% of the sample) in SSLP communities exhibited positive effects, in terms of fewer behaviour problems and greater social competence, compared with those in comparison communities. The evidence indicated that these effects for children were mediated by Sure Start effects of less negative parenting for non-teens. However, findings also showed adverse effects for children of teen mothers (14% of sample) in Sure Start areas, in terms of lower verbal ability and social competence and higher behaviour problems. Also, children from workless households (40% of sample) and from lone-parent families (33% of sample) in Sure Start areas scored lower on verbal ability than equivalent children in comparison communities.

Socially deprived families with greater personal resources may have initially been better able to take advantage of SSLP services and resources, which may have left those with fewer personal resources (such as young mothers and lone parents) with less access to services than would otherwise have been the case. Relatively more socially deprived parents may also find the extra attention of service providers in SSLP areas stressful and intrusive. Programmes led by health services appeared to be more effective than programmes led by other agencies, probably because of better access to children and established health visitor networks (Melhuish et al., 2007).

In 2005 it was decided to re-organise the service so that the programmes were similar to integrated children's centres; at the same time new *Sure Start Children's Centres* from the local community partnerships were transferred to Local Authority control. A subsequent quasi-experimental longitudinal investigation of children and families from SSLP areas, seen first at 9 months and then at 3 years of age compared them with children in similar but non-Sure Start areas (selected from the Millennium Cohort Study). This found beneficial effects for children and families living in Sure Start areas, when children were 3 years old, on 7 of the 14 outcomes assessed. Children in Sure Start areas showed better social development, exhibited more positive social behaviour and showed greater independence/self-regulation than their counterparts in non-Sure Start areas. This result was partially a consequence of parents in Sure Start areas manifesting less negative parenting, as well as a better home learning environment. Families in Sure Start areas also reported using more child and family-related services than families in non-Sure Start areas.

A survey of the parenting support being provided in Sure Start Children's Centres (Barlow et al. 2007), found that few programmes were delivering evidenced-based parenting support, but that some SSLPs were doing this well. Many SSLPs developed their own parenting programmes often using elements of evidence-based interventions but with no guarantee of effective outcomes. In some SSLPs small, sensitive adaptations to meet the needs of local populations (e.g. BME families) were being made appropriately. There was no evidence collected locally of impact, although parents typically reported that parenting programmes worked well for them, that they felt safe in participating in them and that they liked the structured nature of courses.

The most recent quasi-experimental longitudinal study (NESS, 2010) followed up at age 5 a randomly selected subsample (79%) of the children previously studied at 9 months and 3 years and their families. The NESS sample was again compared to a matched sample of Millennium Cohort Study (MCS) children and their families with similar economic and demographic characteristics but who were not living in SSLP areas. The results show that of the 21 indicators examined, six were found to have positive effects favouring SSLP, 2 negative effects were associated with SSLP. The positive effects identified were greater life satisfaction of parents, use of less harsh discipline, provision of a less chaotic and more cognitively stimulating home environment, and indicators of better health care for children (lower BMI, better physical health). The negative effects were that mothers experienced more depressive symptoms and that parents in SSLP areas were less likely to attend school meetings, although overall there were few such meetings.

No SSLP effects emerged in the case of school readiness (children's early language, numeracy and social skills) as measured by the Foundation Stage Profile. This may be due to the fact that after the age of three, both children living in Sure Start areas and control children were likely to have taken up the offer of a free entitlement to pre-school education, which resulted in many of the MCS children also benefitting from Early Years learning opportunities and thus 'catching up' with those living in the Sure Start areas. In terms of changes in child and parent functioning over time, mother in SSLP areas compared to non-SSLP areas showed greater improvements in life satisfaction, and in the home learning environment and greater decreases in harsh

discipline. Although children in SSLP areas manifested greater self-regulation at age 3 (Melhuish et al., 2008), by the time of the follow-up at age 5, no differences were identified. Finally, in comparison with those in non-SSLP areas, there was a greater decrease in workless household status (from 9 months to 5 years of age) for families in SSLP areas.

Summary: Initially SSLPs had some positive effects for the less socially deprived families but were not successful in enhancing child development or parenting for the most deprived families, such as those with teenage mothers, single or unemployed parents. Outreach and impact was enhanced when Health was the lead agency; and health care professionals were also able to identify all eligible families pre- and post-birth.

Following the change to integrated Children's Centres, Sure Start in England has shown some positive effects on health, parenting and child behavior in intervention areas. In particular the improvements in parenting (more stimulation, let harsh discipline) indicate the potential for multi-modal interventions to have an impact on the well-being of vulnerable children as a result of their impact on parents. These findings, in which there is less immediate impact on child development contrast with those of the targeted and structured early intervention initiatives in the USA (e.g. Abecedarian, Early Head Start, High Scope). It is likely that centre-based structured intervention working directly with young children is necessary alongside more general child care provision, outreach, home visits and programmes for parents.

Sure Start Plus (teen pregnancy)

In April 2001, 20 areas were invited to apply to be Sure Start Plus pilot programmes. These areas were selected because they had high deprivation and teenage pregnancy rates; were already Health Action Zones; and had early Sure Start local programmes established. The SSP evaluation had several objectives, of which the most pertinent in this context was to assess the effectiveness of Sure Start Plus in reaching young pregnant women and young parents, with the objective of improving the health, wellbeing and education of parents and children and reducing their risk of social exclusion.

The National Evaluation of Sure Start Plus (Wiggins et al., 2004) used mixed-methods and had four main components: a service delivery study; an evaluation of impact using a matched case control study; an analysis of joined-up policy and practice; and an economic commentary on the cost of the programme. The evidence suggests that Sure Start Plus has increased support with emotional issues, including domestic violence and has led to improvements in young women's relationships with family members. Emotional support around the time of birth, especially from family members, has been linked to more positive long term outcomes for teenage mothers and on increased participation in education for young mothers under the age of 16.

Despite innovative work in some individual projects, the programme had less impact on specific health objectives (e.g. reduction of smoking and increased breastfeeding) and on participation in education, training and employment for those aged 16 and older. Some staff were reticent to address these objectives with vulnerable clients or

clients who identified other issues as a priority. Participation rates in education, training and employment were highest for young women when the Sure Start Plus advisers were based in the education sector or when the programme was specifically focused on reaching these objectives.

SSP was less successful in reaching and supporting young fathers. Many programmes lacked either a strategy or sufficient resources to work with young men. Where there was a clear strategy and resources to employ additional or specialist staff, young fathers participated and appreciated support

Summary: There is evidence that enhanced Sure Start Programmes that focus on teenage mothers can positively affect health behaviours, increase engagement in education, and increase social and emotional wellbeing by -, for instance - addressing domestic violence or family discord and enabling preparation for parenthood. SSPs have been less successful in engaging young fathers, but programmes that have a strategy to engage males and the resources to do this can also increase men's engagement.

Flying Start (Wales)

Flying Start is targeted at 0-3 year olds in the most disadvantaged communities in Wales. It aims to create positive outcomes in the medium and long term. It is a prescriptive programme with more limited scope for local planning than Sure Start or Starting Well. Core components comprised: free quality part-time childcare for 2-3 year olds; an enhanced home visiting service by health visitors; access to evidence-led parenting programmes (e.g. Incredible Years; access to Language and Play sessions). A qualitative evaluation of Flying Start (Flying Start, 2009) used purposive sampling in 5 of the 22 partnerships, and included interviews with a range of stakeholders - users, non-users, service providers, and management teams.

Flying Start was perceived by these stakeholders to have built relationships and engaged with families that have traditionally been harder to reach or whose engagement with mainstream services is minimal; worked with families at the highest level of need; identified needs earlier as well as wider issues or problems; engaged parents in the lives of their children; created effective referral routes either to other Flying Start entitlements or to wider generic services; developed effective working relationships with local schools which greatly aided the transition from Flying Start to nursery and then to school; established an effective multi-agency approach to delivery; recruited a wider group of professional staff to better meet local needs; invested in staff development and training; achieved generally high levels of satisfaction and a strong demand for the services.

Parent-delivered education component of Flying Start

Ford (2009) evaluated a home educational activities programme which was a component of Flying Start Wales among families in economically disadvantaged areas of Wales. Participants were recruited from districts identified by the local LEA as having markers of social deprivation. Half of the families were headed by young single mothers and the majority were in receipt of unemployment or sickness

benefits. The intervention consisted of a parent-delivered education programme called “Let's Play in Tandem”, which aimed to develop school readiness and included pre-reading skills, numerical skills, and general knowledge. Children participated in the programme for 12 months and a project worker was assigned to each family who was visited once a week, for 90-120 minutes. The family received a pack of 3 activities - one focusing on vocabulary and general knowledge, one on pre-reading, and one on numerical skills. The activities took at least 20 minutes each to complete. Regular newsletters and social events for parents were provided, and parents were asked to keep a diary of progress. The intervention was delivered in 4 stages of 10 weeks, and participants were followed-up at 12 months. The control group began the programme one year later and were encouraged to attend other Sure Start interventions in the area.

The intervention group outperformed the control group on all measures of academic ability (reported as composite t test scores). Teacher ratings of children’s listening and communication skills, improved inhibitory control and vocabulary, all favoured the intervention group. No group difference was found for short term memory for numbers or children’s capacity to understand the emotions and actions of others. The authors suggested the need to identify which parent behaviours are most influential.

Summary: Flying Start Wales allowed for much less local autonomy in service delivery than Sure Start Local Programmes in England. Stakeholder perceptions about the programme are highly positive but there has been no evaluation to date of the programme’s objective impact on children and parents.

‘Let’s Play in Tandem’, a structured programme delivered as part of Flying Start, enhanced emotional and cognitive development of pre-school children. The impact of this peer-provided programme can in part be attributed to the combination of home-visits with centre-based activities for the children and the detailed training given to the parent providers.

2. What characteristics of a home-visiting intervention are critical to achieving positive social and emotional outcomes for vulnerable children and families (e.g. timing, onset, duration, expertise required etc.)?

i) Programme fidelity

Manualised programmes that include a method of assessing fidelity of delivery (e.g. programmes such as FNP) are more likely in the long term to have an impact on children and parents. They can also be provided within the context of multi-modal support that is less well defined. So, for example, one study found that evidence-based initiatives can be delivered very effectively through Sure Start services as long as they are properly resourced and faithfully delivered by well-trained regular staff (Hutchings et al., 2007). In Wales the Flying Start staff were trained and supported to deliver interventions that which have been tried and tested in the US, but were also encouraged to apply local knowledge and to respond to parents' self-defined needs, in order to enhance engagement. Evaluation of Starting Well and Sure Start suggests that variation in the delivery of specific interventions across sites has the potential to mask intervention effects and that poorly delivered interventions can mask potentially positive associations. A major review concluded that substantial improvements are needed in the way that early intervention programmes are implemented and evaluated, using objective outcomes and with procedures in place to documents whether the essential elements of the programme have been delivered (Olds et al., 2007b). Unless this happens then the available evidence will remain weak. Many interventions do not have clear-cut methods of looking at fidelity of delivery.

ii) Well-trained professional staff

Home Visiting programmes delivered by professionals are more effective than those delivered by paraprofessionals or by parent volunteers, although there a small amount of evidence that well-trained volunteers following a curriculum and supported with supervision can have an impact. Findings are consistent with review level evidence on Home Visiting (Barlow et al., 2010; Stewart-Brown & Schrader, 2010) and on programmes for adolescent mothers (Letourneau et al. 2004). Volunteer support is likely to be more variable in its content and vary according to the personality of the provider (MacPherson et al., 2010).

Centre-based supports are strengthened by recruitment of key workers from the local community who may be best placed to identify local level, potential barriers.

iii) Addressing and overcoming barriers to engagement

Irrespective of the type of programme being provided, engagement and retention of parents is an important factor in success. The modest gains of Sure Start were more evident in programmes led by health services, since relevant families could be contacted early in the child's life and told about the services on offer. The consequences of failure to engage families in early intervention programmes are significant, given that refusers are very often those with the greatest need (Barnes et al., 2006a). People who do not engage in services may belong to minority groups,

they may be ‘invisible’ e.g. because of mental illness; or ‘service refusers’ who tend towards mistrust and hostility to health and social services (Kirkpatrick et al., 2007). The initial lack of a positive impact of the Sure Start local programme on the most vulnerable (Belsky et al., 2006) is likely to be related to the reliance on families coming forward to use services. The latter may have been exposed to offers of support in the past, such as regeneration schemes that did not deliver. However, there may be a number of other reasons why parents do not engage, including difficulties in access to centres because of lack of public transport; embarrassment at their own children’s behaviour; anxiety about other parents in the group (particularly in areas with high levels of crime and drug consumption) (see Avis et al., 2007; Coe et al., 2008) or simply very low confidence.

Taking time to establish a relationship: The critical importance of building trusting relationships between staff and a service user was highlighted in six papers. Barlow et al. (2007) found that some women, who appeared to mistrust ‘authority’ figures, perceived nurse home visitors as being of socially different (i.e. superior) class and/or judgemental. The findings of this study suggest that some women refuse services because of an inability to trust other people (based on unconsciously remembered earlier experiences) or unwillingness to trust others, especially professionals (as a result of consciously remembered earlier experiences). Avis et al. (2007), Coe et al. (2008) and Smith (2009) identified parents’ fear of being judged, fear of ‘prying’ and criticism as barriers to engagement, pointing to the need to take time and to work using a non-judgemental, strengths-based approach, without compromising child safety.

Kirkpatrick et al. (2007) found that women valued home visitors who encouraged women to have confidence in their own ideas and feelings about parenting and who did not impose their views. Home visitors’ ‘showing interest’ made it easier for women to open up, which in turn allows health visitors to pick up on subtle clues. But negative themes emerged as well: health visitors contacting social services without prior discussion led to a breakdown of trust.

This points to the need for service providers to take time to establish trusting relationships with parents, particularly those who are ‘vulnerable’ and hard to reach, and those with negative experiences of people ‘in authority’. One author suggested the potential benefits of beginning with less frequent visits (possibly by peer-providers) and building up to more sustained contact with professionals (Barlow et al. 2007).

Flexibility to respond to parents’ priorities: Barlow et al. (2007) found that engagement in Home Visiting programmes is always likely to be better if service providers begin by asking parents about their perception of their needs. Some women stressed their desire for practical help. The provision of practical help may then enable some women to begin to think about addressing other issues in their lives. Perhaps most importantly it may have helped them to begin to feel that they were being heard and to begin to be able to trust. The need for flexible support was highlighted in studies of the FNP nurse-home visiting programme (Barnes et al., 2008; 2009a; 2011a) and of Flying Start (Flying Start 2009). Once the programme delivery schedule was set in the Flying Start initiative, health visitors or volunteers

were encouraged to work together with mothers and families to tailor the programme content and mode of deliver to suit the needs of the family (Murphy et al. 2008).

Retaining parents: One of the potential barriers identified (Kirkpatrick et al., 2007; Wiggins et al., 2004) was parents' reluctance to commit to extensive home based support programmes. Some women reported that they were too burdened by other demands to think about participating, with time commitment issues also acting as a barrier (Barlow, 2005). Kirkpatrick et al. (2007) reported the importance of a having a consistent schedule of visits, because visits that were 'fragmented' made it more difficult to establish a trusting relationship.

One paper highlighted that the health visitor, mentor, or in-home support worker should also be proactive in recognising warning signs of loss of involvement with the programme and work with the family to address concerns about their continued participation in the programme (Barnes et al., 2009a). It was suggested that this could be achieved by offering the family a break from the programme, changing the content delivered and working with families to creatively meet their needs and achieve goals.

Engagement of fathers: Programmes that have the clear intention of engaging and retaining fathers are the most effective in achieving this. Review-level evidence has shown that effectiveness of antenatal and postnatal support to fathers is associated with programmes that involved men's active participation with and/or observation of their own infants/children and involve multiple exposures to the intervention (Magill-Evans, 2006).

User-friendly information: Several papers highlighted the significance of parents' lack of understanding about the content and objective of services or indeed that these services were available at all (*www.ness.bbk.ac.uk*; Coe et al., 2008; Flying Start, 2009; Kazimirski, 2008). Parents suggested that they were more likely to attend Sure Start if they received an invitation from the Sure Start programme (Avis et al., 2007). This could be in the form of a newsletter, phone call, friendship schemes, or home visits. Additionally, parents suggested that these invitations should be on-going, especially if a parent had stopped participating in Sure Start. Useful strategies might involve creating dialogue with parents who have overcome their anxieties about participation in Sure Start and using their experiences to help others; for example, through befriending schemes that allow new parents to be accompanied to events. It is important to recognise that it takes time to build trust and confidence in parents, who may have low self-esteem, limited expectations, anxiety about the opinions of others, and apprehension about the Sure Start agenda.

A continued, planned communication strategy involving multiple strategies (including innovative strategies such as text messages and 'parent ambassadors') can be helpful in enhancing parents' understanding of what services involve. Multi-agency signposting and cross-referral combined with good inter-agency working is crucial to engage parents and maintain engagement (Flying Start 2009). Intensive and continued communication between parents and service providers is required in order to overcome the stigma that can attach to targeted services and make them attractive to the people who could benefit.

Barlow (2005) also reported that some women felt with hindsight that the best time to be offered a Home Visiting programme would have been after the birth of their baby. However, review level evidence suggest that home visiting is most effective if it begins in the antenatal period, particularly for first time parents who are then most open to guidance (Olds et al., 2007b).

iv) Physical quality of children's centres: Sure Start programmes were given substantial funds for purpose built centres and in-depth study was made of the relevance of the building for engaging local families as part of the National Evaluation (Ball & Niven, 2005). By late 2004, 215 new buildings had been built in the first 260 SSLPS and a further 420 buildings had been converted. These centres were generally found to have been successful in avoiding the stigma which can be attached to other public service premises, because they were based in easily accessible buildings with which parents became familiar and in which they could relax. However, interviews with parents revealed that some new buildings were considered too 'clinical', rather than representing a community resource.

The report concluded that centrally-located, conspicuous buildings enhanced the local profile of individual SSLPs and could have the potential to increase a programme's visibility and the number of families who engage with it. Many SSLPs shared buildings with other agencies; this was reported to have some benefits (larger buildings, with more going on in them, more inter-agency working), but shared premises could also cause difficulties. It appears to be easier for SSLPs to share the same building if they are the dominant partner in financing and managing these premises, and if the other agencies also work with children, ideally with children who are not much older than the Sure Start age of under 4. Based on interviews with parents, the report concluded that parents being consulted about the design and appearance of buildings increased their sense of ownership. Conversely, being consulted and then ignored or over-ruled generated disappointment and alienation.

Another, smaller scale study in one local area of London concluded that it is important to ensure that premises for centre-based activities are attractive and clean (Avis et al., 2007). Poor physical quality of children's centres is a major deterrent to many parents. The Avis (2007) study was conducted at a time when the local authority's finances were in severe difficulties and the condition of SS centres was affected. Evidence elsewhere from the later Neighbourhood Nurseries evaluation has shown the importance of attractive surroundings for children's learning (see e.g. Mathers & Sylva 2007 in the following section).

v) Timing: There is currently limited UK evidence about timing and duration of services. Review level evidence (e.g. Bernazzani, 2001) has shown that programme effect sizes are stronger for interventions that last for six months or more and that involve more than 12 home visits. Interventions that begin early (either antenatally or at birth) are more effective than those that begin in later parenthood.

v) Enabling parents to learn from other parents: Papers on Sure Start show the importance of parents' relationship with other parents for social contact, sharing information related to community resources and parenting and for building job-related skills. A common issue identified by parents was that attending Sure Start activities allowed them to connect with others, and thus, mediate some of the

feelings of isolation that they experienced while caring for young children (Avis et al., 2007).

At the same time parents may fear mixing with adults in areas in which there are high levels of crime and may prefer to ‘keep themselves to themselves’. Parents also express the desire for time for themselves, as opposed to activities focused on children alone (Avis et al., 2007).

3. What are the most effective and (if there is evidence) cost-effective early education and child care progressive interventions for helping to improve and maintain the social and emotional wellbeing of vulnerable children (0-5 years)?

Two studies provide evidence about a programme implemented in the UK, EPPE 3-11 (Sylva et al. 2004; Sammons et al. 2004; 2007; 2008) and the Neighbourhood Nurseries Evaluation (Mathers & Sylva, 2007). While the first of these did not specifically recruit vulnerable children and families, the data were analysed in relation to family vulnerability. The second programme was targeted to the most deprived neighbourhoods in the England.

Effective Pre-school and Primary Education Project

The Effective Pre-school and Primary Education Project 3-11 (EPPE 3-11) is a large scale longitudinal study of the influence of pre-school and primary school in England on children's cognitive and social/behavioural development (Sammons et al., 2004; 2007; 2008; Sylva et al., 2004; 2010). The study originally followed children from the start of pre-school (at age 3 years plus) through to primary school entry and then across Key Stage 1 (KS1). Over 3000 children and 141 pre-school centres were included in the first phase of the research. Children were tracked from age 3 years to the end of KS1 in primary school at age 7 years.

The study addressed 5 questions: impact of pre-school on children's intellectual and social/behavioural development; whether some pre-schools are more effective than others in promoting children's development; characteristics of an effective preschool setting; impact of the home and childcare history on children's development; whether effects of pre-school continue through Key Stage 1 (age 6 and 7), then following them through primary school to compare the impact of preschool provision with their primary school experience.

The following results were identified:

Impact of preschool on children's intellectual and social/behavioural development and sustainability of effects through KS1: Pre-school experience, compared to none, enhances all-round development in children. Duration of attendance (in months) is important, and an earlier start (under age 3 years) is related to better intellectual development. Part-time and full-time attendance is equally effective in producing benefits. Disadvantaged children benefit significantly from good quality pre-school experiences, especially where they mix with children from different social backgrounds. However, disadvantaged children tend to attend pre-school for shorter periods of time than those from more advantaged groups (around 4-6 months less). Attending pre-school nevertheless has a positive effect on 'pro-social' behaviour at age 10, compared to staying at home. For other dimensions of social/behavioural development the effect of attending pre-school are 'washed out' in the longer term.

Children who attended higher quality pre-schools show the most benefits in all round social behavioural development at age 10 as well as cognitive development. Higher quality pre-school in curriculum terms is linked to increased self-regulation, and pre-school that is of higher quality in terms of caring/emotional relationships is linked to reduced hyperactivity and better pro-social behaviour. This is important since

disadvantaged families are likely to live in areas where the provision may be of lower quality.

Characteristics of an effective preschool setting: There are significant differences between individual pre-school settings in terms of their impact on children, with some settings being more effective than others in promoting positive child outcomes. Good quality can be found across all types of early years settings; however, quality is higher in settings that integrate care and education, and in nursery schools.

The importance of home environment on learning: The importance of thinking about early child care in conjunction with the home environment was highlighted by the findings of this study, which showed that for all children, the quality of the home learning environment (HLE) was more important for intellectual and social development than parental occupation, education or income and predicted more variability in outcomes than preschool attendance. Child, family and early HLE factors remain important influences on children's social/behavioural development at age 10, especially for hyperactivity and self-regulation. A good early home learning environment still predicts better self-regulation at age 10, but on its own is not enough to ensure high self-regulation for children who attended poor quality pre-school settings. Higher levels of self-regulation were associated with higher levels of attainment, particularly in reading, suggesting that self-regulation is an outcome with a strong cognitive aspect.

The factors with strongest effects across the set of four social/behavioural outcomes are gender, health and behavioural problems as reported by parents at entry to the study, need for support with English as an additional language (EAL), and the Early Years HLE.

Summary: EPPE shows that pre-school can play an important part in combating social exclusion and promoting inclusion by offering disadvantaged children, in particular, a better start to primary school. The findings indicate preschool has a positive impact on children's progress over and above important family influences. Maximum benefits in terms of social and behavioural outcomes during KS1 is achieved by children who have a good home learning environment, a high quality preschool, and a medium or high academically effective primary school compared with children who experience two, one or none of these.

The <u>combination</u> of these three aspects is also important for promoting positive social/behavioural development in the longer term through the primary school years.

Neighbourhood Nurseries Initiative (NNI)

The aim of the Neighbourhood Nurseries Initiative (NNI) was to reduce unemployment and thus tackle child poverty by offering high-quality, affordable childcare in the most disadvantaged areas of the country. By August 2004, 45,000 new places for 0-4 year olds had been created. The NNI evaluation (Mathers & Sylva, 2007) focused on two themes: (i) *Childcare Quality,* which aimed to establish

whether the new places and nurseries created by the NNI were of high enough quality to foster the development of participating children, and the relationship between centre characteristics and children's development. (ii) The *Quality and Children's Behaviour* strand used the information gathered by the quality strand to explore the effects of early centre-based childcare on 810 children attending the sample Neighbourhood Nurseries, having taken into account child and family background. This study focused on children under the age of 3.

Key findings on childcare quality: The effects of quality on children's behaviour were significant, but moderate in size compared with other (stronger) influences, such as gender, age, special needs and time spent in centre-based childcare. There was wide variation in the quality of provision for children in infant and toddler rooms with higher quality in the LA maintained sector, Children's Centres and in larger centres. Mixed age rooms were associated with higher quality provision, especially educational provision, but the presence of older children was associated with more worried and upset behaviours by younger children in mixed age rooms.

Children with access to a trained teacher were more co-operative and sociable, and children in rooms with a better qualified workforce were more co-operative and displayed fewer worried and upset behaviours than children cared for by less well-qualified staff teams. Older children (those aged between 33 and 42 months) showed more peer sociability in centres that provided a high quality daily schedule, for example, an appropriate daily routine, opportunities for free play and high quality group play activities.

The nature of the physical space was found to be important. Children displayed significantly fewer worried and upset behaviours in centres that offered a spacious, well-maintained and pleasant physical environment, with appropriate furniture for care routines and educational activities, and comfortable areas for children to relax and spend quiet time. These results confirm the findings of the EPPE project, which concluded that high quality provision can reduce some of the negative behaviours associated with attending centre-based provision. Children in larger centres were less antisocial but were also rated as less co-operative and less sociable than children in smaller centres.

Attending a centre with a high proportion of parents in employment had a positive effect on the co-operative behaviour of children in the centre. Time spent in centre-based childcare (hours/days per week) was associated with greater confidence and sociability, particularly in children aged less than 2 years and 9 months, and for children attending 35 hours per week or more. However, time spent in childcare was at the same time, also associated with some more negative behaviour. Children who attended 30 hours or more each week were found to engage in more anti-social behaviour (e.g. teasing other children and name-calling). Children who attended 35 hours or more also tended to engage in more worried and anxious behaviours.

Summary:

Attendance in childcare centres has both positive and negative effects on children's behaviour. Although the age at which children started attending their Neighbourhood Nursery did not have an impact (either positive or

negative) on their behaviour, duration was relevant. Specific benefits were evident for children ranging from under one up to 3 and 4 years. However, the longer children had been attending their Neighbourhood Nursery, the more likely they were to display anti-social behaviours. In common with research in the USA this suggests that children experiencing centre care early in life may generally be more active in both positive and negative ways. Duration of care was related to both positive and negative outcomes, e.g. greater sociability on the positive side, or increased teasing or anxiety on the negative side.

The effects of high quality preschool centres on children's behaviour were significant but moderate in size compared with other (stronger) influences such as gender, age, special needs and time spent in centre-based childcare.

Provision of day care

A randomised controlled trial (Toroyan et al., 2003; 2004) assessed the effects of providing preschool daycare facilities (in contrast to part-time nursery education) for young children on the health and welfare of disadvantaged families. The aim was focussed on increasing opportunities for maternal employment rather than on child development but provides some indication of the impact of day care per se for vulnerable families. The study was set in an Early Years daycare centre in Hackney, London and included 120 mothers and 143 eligible children (aged between 6 months and 3.5 years). The intervention consisted of a place at the centre, while control families used other child care that they secured themselves.

The study found that provision of child day care increased maternal employment but did not increase household income suggesting that the provision of day care may be insufficient as a strategy to reduce poverty. There was no impact on the children's cognitive development or socio-emotional problems. Intervention group children used more health services and were also at higher risk of otitis media with effusion although in both cases estimates were imprecise.

Process data collected during the trial and published separately (Toroyan, 2003) suggested that the environment in which the trial took place might explain some of the outcomes. Wages for jobs taken by the mothers in the study were generally low, and women entering paid employment or increasing their hours of paid work may have had their welfare benefits reduced. Housing and/or Council Tax Benefit are likely to be reduced or completely withdrawn; home-owners would no longer receive the same level of assistance with mortgage payments, while those already in paid employment might also experience a reduction in their Working Families Tax Credit entitlement. Data collected through in-depth interviews suggested that it may be the flexibility of day care that is particularly important in allowing women to return to paid employment.

Summary: Providing high quality day care may be insufficient as a strategy to reduce poverty (one of the risk factors for adverse child developmental outcomes) in highly disadvantaged areas where parents' engagement in paid employment can lead to loss of benefits of equal or greater value. Attention

needs to focus on quality of day care and its educational content, and also on making the best care available to disadvantaged families.

4. What characteristics of centre-based early education and child care intervention are critical to achieving positive outcomes for vulnerable children and families, reduced vulnerability and increased resilience to help achieve positive outcomes and general readiness for school?

i) Quality of the staff. The development of a well-qualified childcare workforce is vital for improving positive child development. In particular, employing qualified teachers to work with children under the age of 3 has a significant impact on children's developing co-operation and other peer skills. Quality indicators include warm interactive relationships with children, a trained teacher as manager and having a good proportion of trained teachers on the staff (Sylva et al., 2004; Sammons et al., 2007).

NNI settings with Children's Centre status were of higher quality and had better child outcomes. Future support (and evaluation) of the programme should focus on the educational aspects of provision to ensure that the 'learning' aspects of the curriculum are given equal weight to the more 'social' aspects (Sammons, 2007).

ii) The structural nature and management of the centre. UK research supports the development of larger centres because these offered higher quality provision (measured on the ITERS-R scale; Harms et al., 1990) and children showed reduced levels of antisocial and worried/upset behaviour. However, larger centers need to be supported in finding ways to ensure that their children are not overwhelmed by size, and are provided with the nurturing environments they need to develop their confidence and sociability. It is suggested that mixed age rooms may enhance cognitive development at the price of emotional security (Sammons et al., 2007).

Based on the EPPE study, a broad social mix is recommended for early childhood settings, because a higher proportion of employed families was related to decreased anti-social behaviour. While there is evidence that all children benefit from centres with a higher proportion of parents in employment, even high quality child care cannot guarantee parents' return to paid employment. This depends on local contextual factors, in particular the availability and level of pay of work in the area (Toroyan, 2003; 2004).

Local Authority maintained centres should continue to be supported and developed, because these are particularly effective in offering high quality educational provision. Nurseries in other sectors need further support to raise the quality of the provision they offer (Sammons et al., 2007).

Where settings view educational and social development as complementary and equal in importance, children make better all-round progress. The qualitative evaluation of the EPPE study (Siraj-Blatchford, 2010) concluded that effective pedagogy includes: interaction traditionally associated with the term "teaching", the provision of instructive learning environments and 'sustained shared thinking' to extend children's learning.

5. What factors are relevant to the extent to which progressive early education and child care interventions are effective and cost-effective, such as the timing of their onset, the particular curriculum being followed, the theoretical basis for the intervention or the person delivering the programme?

At present, the UK based evidence does not indicate that the age at which children start attending neighbourhood nurseries has an impact (either positive or negative) on their behavior. However, duration of childcare during the early years was important: the longer children had been attending their Neighbourhood Nursery, the more likely they were to display anti-social behaviours (Mathers & Sylva, 2007). More research is also required to explore the effects of length of day on children's behaviour. In particular, the effects of attending for a small number of long days over a week, as compared to a greater number of short days, need to be explored.

6. What lessons can be learnt from current UK-based programmes aimed at promoting the social and emotional development of preschool children, or observational studies of the impact of early education for vulnerable children?

The main lesson from UK and other evidence is that structured, high quality preschool provision can make a substantial difference for all children (Melhuish, 2011). The 'boost' provided by preschool makes a more important difference for vulnerable children who are likely to start out at a lower level of achievement than advantaged counterparts (Sammons et al., 2004). Small scale studies in the USA have documented that preschool contributes to better educational, occupational and socio-emotional outcomes for disadvantaged children over the long-term (Heckman, 2006). The UK evidence base is expanding with evidence from the EPPE study up to age 11 (Sammons et al., 2008). Preschool experience has been shown to reduce inequalities in European countries such as France (Dumas & LeFranc, 2010) and in Scandinavia it has been found to have strong benefits in the long-term for educational and occupational outcomes (Havnes & Mogstad, 2009). Evidence is starting to emerge from other countries (Berlinski et al., 2009; Montie et al., 2006). In the USA, where preschool interventions have been running for many years, new evidence has identified benefits of preschool education up to age 28, particularly strong for children of the more educationally disadvantaged parents (Reynolds et al., 2011). It will be important to document long-term benefits in the UK.

6. Identification of children and families at risk.

What factors increase the risk of children experiencing social and emotional difficulties?

The concept of 'risk' needs to be conceptualised in relation to when it is identified and how it will then be used to identify families who are then offered interventions. Families were identified for the Sure Start programme, for Flying Start, Starting Well and for the Neighbourhood Nurseries Initiative on the basis of their residence in an area of deprivation. Mothers-to-be were identified for the FNP on the basis of their age (under 20). However, the early phase of the National Evaluation of Sure Start (Belsky et al., 2006) demonstrated that identifying vulnerability thought location in particular neighbourhoods did not necessarily lead to good take-up of services. The family screening used during pregnancy in the Home-Start evaluation (Barnes et al., 2006a; 2006b; 2009b) similarly did not necessarily lead to service provision. The interaction with the particular service is crucial. The evaluation of barriers to

participation in Flying Start offers a useful framework for identifying parents who do not engage.

Some useful UK evidence on identification is available from work conducted to prepare for providing the FNP in England (Barnes et al., 2011b). As a precursor to implementing the NFP programme in England a review was commissioned by the government (Hall & Hall, 2007) to determine the most useful selection criteria for recruitment, based both on evidence of potential for impact and on the ease with which factors could be identified during routine NHS contacts in pregnancy. The review summarised evidence indicating risk for adverse outcomes for children, both educational (e.g. few or no qualifications) and behavioural (e.g. mental health problems, criminal behaviour). The review highlighted the challenge of identification in pregnancy since a greater number of well-established risk factors for poor child outcomes are identifiable only after birth (e.g. insensitive or harsh parental behaviour, problematic child temperament).

What risk factors predict poor child outcomes?

In Hall and Hall (2007) factors that predict poor child outcomes were divided into those relating to the mother-to-be's past history and to her current circumstances. While noting that it is not possible to specify a necessary minimum number of risk factors, the authors indicate those that could most usefully be used to identify eligible mothers-to-be. However, Hall andHall (2007) also noted that it might prove problematic for recruitment if the programme was perceived as stigmatising. While many factors predict both poor academic progress and delinquency or mental health problems of children, it was felt that FNP should be 'sold' through its potential to "ensure that children thrive in school and benefit from their education."

The factors for more than one adverse child outcome with the most robust evidence are predominantly related to social exclusion: maternal school failure, mother in care/looked after, low socioeconomic status, young mother, single parent or non-involved father, resident in a deprived neighbourhood, marital/parental discord, ethnic minority status (particularly Pakistani or Bangladeshi), parental criminality, and parental substance abuse and/or mental health problems. These factors all represent risks for child behaviour problems, particularly if more than one is present in conjunction with low SES. The review concludes that the majority of the evidence related to maternal mental health problems and subsequent child development is concerned with their presence postnatally and cannot therefore be used as selection criterion for FNP in pregnancy.

The Department of Health PREview project subsequently investigated the evidence base and feasibility of a tool that will help health professionals target the NHS Healthy Child Programme effectively to optimize child outcomes (University of York, 2009). As part of the project, nationally representative data from the Millennium Cohort Study (MCS) were analysed to identify factors in pregnancy that predict poor child developmental outcomes at five years (Kiernan & Mensah, 2009). Behavioural outcomes were based on the Strengths and Difficulties Questionnaire (Goodman, 1997) completed by the main caregiver and academic performance based on the Foundation Stage Profile completed by the classroom teacher. Taking other factors into account statistically, difficulties in children's learning and academic performance and child behaviour problems were *both* associated with a number of factors that

could be determined prenatally. The list reflects to a great extent the factors identified by the Hall and Hall (2007) review: mother under the age of 24 at the child's birth, mother has few or no qualifications, lone mother, income at or below £10,400, language in the home not English, pregnancy unplanned, not bothered or not happy about pregnancy, mother continues to smoke in pregnancy, is not an owner occupier, lives in area deprivation within the bottom three quintiles. One factor that was relevant only for predicting learning and academic difficulties was hat 'mother has never worked'. Two factors relevant only for predicting behaviour problems were 'mother has lived away from home at a young age' (i.e. in care of social services), and 'mother not married at the time of the birth'.

Which factors are the most consistently specified?

Combining the above two pieces of work and focussing first on characteristics that can be identified in pregnancy the list of indicators is as follows: low socioeconomic status (or neighbourhood deprivation), lack of maternal educational qualifications/failure of the mother to complete school, young maternal age, mother has been looked after, single parent, marital discord and partner criminality and/or substance abuse.

Using identification criteria

Selection of potential indicators is, however, the easy part of identifying families. Two issues then remain: how to obtain the information and how to present any screening process to families to avoid stigma, which will then reduce the likelihood of take-up to the programme, whether it be home-visiting or centre-based support, or a combination of the two. A detailed study of midwifery records as part of the FNP implementation evaluation (Barnes et al., 2011b) found that while midwives did identify vulnerabilities their findings were recorded on paper formats (some of which were kept by clients) but that much of this information was not entered into the electronic data system. Some important information was not collected at all during the booking process, in particular on maternal education and on household income (i.e. to reveal poverty), or on partner characteristics such as criminality. When interventions are designed to be preventative clients do not necessarily present with immediate 'problems' that make it obvious that they might benefit from a programme.

Qualitative interviews with nurses who were asked to use eligibility criteria beyond maternal age to identify women suitable for FNP revealed that they were reluctant to let potential clients know that enrolment in the FNP programme depended on their meeting these criteria. In addition, they sometimes disagreed with the criteria that they were asked to use and might persuade an eligible mother that she did not need the programme, or might recruit a mother who did not meet the specifications (Barnes et al., 2011b). A similar situation arose in the trial of Home-Start peer support (Barnes et al., 2006a; 2006b). Scheme organisers were aware that a vulnerability index had been used to identify mothers as suitable for support but, on making the recruitment visit, formed their own opinions about the family and dissuaded some from the service in order to restrict it to the most needy families so that they could reserve the (usually small number of) available home visitors for families who appeared more overtly distressed.

A preferred method of identifying vulnerability that requires more time is indicated by data from the European Early Promotion Project which showed that the use of two

promotional visits during the ante-and post-natal periods, using the Ante- and Post-natal Promotional Interviews, found a significant improvement in the accuracy of need identification by health visitors (Papadopoulou et al., 2005). Thus, while it is often useful to be able to target specific vulnerable populations from existing records, or from a series of structured questions that could be asked over the telephone, it will almost always be more effective for professionals to spend some time in conversation with parents using a manualised but flexible approach. This might be an important way for professionals to identify vulnerability in a context which allows clients to feel that they are involved in the process, which is in turn likely to strengthen their participation in any intervention that is subsequently offered.

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